Bottisham Village College

KNOWLEDGE ORGANISER

YEAR 7 TERM 2

KNOWLEDGE ORGANISERS

At Bottisham Village College, we are striving to create a five-year curriculum plan that builds effective revision strategies into homework and lessons, to ensure that students are able to place powerful knowledge into their long-term memories. Additionally, we hope that this will help build effective learning strategies from early in their time here at the college.

Based on evidence, we know that regular recall activities are the best way of achieving this goal and committing powerful knowledge into the students' memories.

At the start of each term, we shall publish all the knowledge organisers that students will require for their studies in each curriculum area. These will cover a range of aspects: facts, dates, characters, quotes, precise definitions and important vocabulary. We are clear: if this fundamental knowledge is secured, students can then develop their higher-level skills of analysis and critical understanding with greater depth.

They will be given an electronic A4 Knowledge Organiser (KO) booklet for each term containing all of the knowledge required. In lessons, Bottisham staff will be regularly testing this fundamental knowledge, using short-quizzes or even more formal "Faculty Knowledge Tests".

The best way to use these organisers at home, is to follow a simple mantra:

1. Look at a certain aspects of a particular knowledge organiser
2. Cover up part of their knowledge organiser
3. Write it out from memory
4. Check and correct any spelling mistakes, missing bits or mistakes

So simple but so effective.

ART

Kandinsky & Printing

You will learn about Kandinsky and in particular how music inspired him to paint.

Kandinsky art / music

FROM AN EARLY AGE HE PLAYED THE PIANO AND THE CELLO. THROUGHOUT HIS LIFE HE CLAIMED THAT SOUNDS STIRRED HIM DEEPLY AND THAT HE SAW IMAGES WHEN HE LISTENED TO MUSIC. "I SAW ALL THE COLOURS IN MY MINDS EYE, WILD LINES VERGING ON THE INSANE FORMED DRAWINGS BEFORE MY VERY EYES."

You will learn how to imaginatively create a double page of research inspired by his style.

You will create your own mixed media drawings by responding to sounds, beats and rhythms.

Listening to music samples

You will create your own designs and learn how to extend your technical expertise of how to use colour pencils with accuracy and precision.

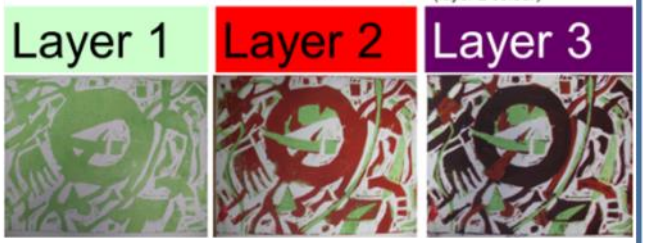
You will learn about the reduction lino print process

Image transfer
Subtractive cutting
Ink application
Pressure
Alignment

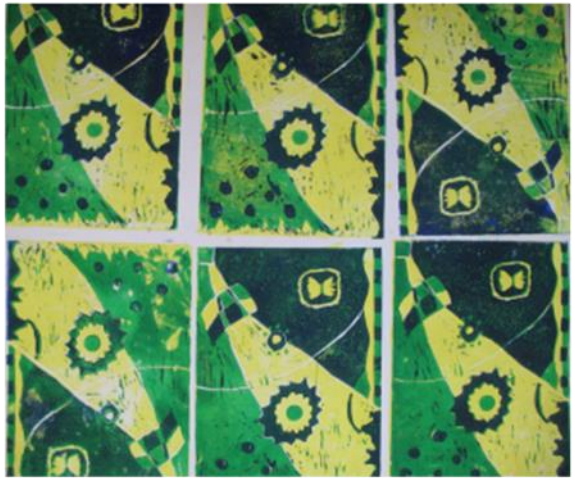
Cut out anything you want to KEEP white

Cut out anything you want to KEEP Green (layer 1 colour)

Cut out anything you want to KEEP orange (layer 2 colour)



You will create your own series of prints.



COMPUTING

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

Unit Topics:
Social Media Use
How computers work
Programming

Programs use:
GoogleSlides, GoogleDocs
Microsoft Office
Small Basic
Crocodile Clips

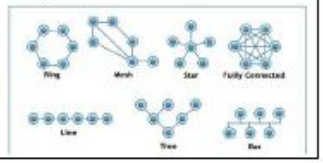
Digital Literacy

ICT Legislation:
Computer Misuse Act. (1998)
Data Protection Act. (2018)
ICT Health and Safety Act. (1974)
Copyright and Patents Act. (1988)

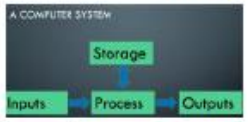
Password Management:
Between 5 – 12 characters.
A mixture of letters, numbers and symbols.
Memorable but not obvious.

File Management:
Save as – saving for the first time so you can choose a name and location.
Save – updating an already saved file.

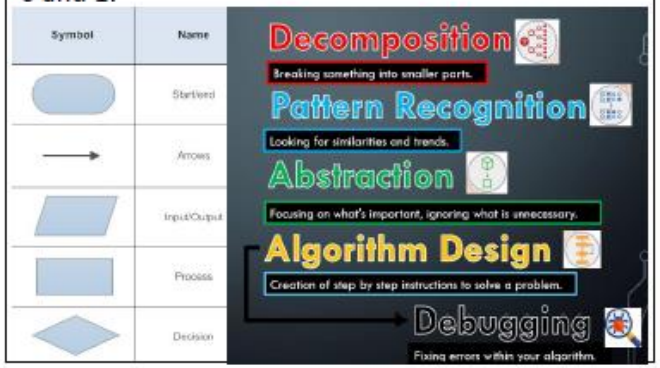
Networks:
A network is a collection of computers connected digitally. There are different types of networks including
Local Area Networks,
Wide Area Networks and
the Internet.



Computer Science



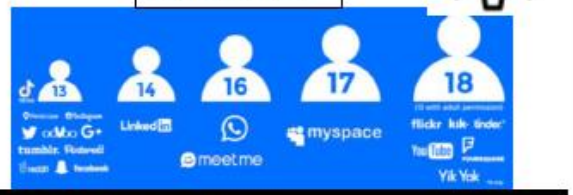
Input devices - put information into the computer. For example a keyboard, microphone or mouse.
Output devices - allow the user to get data out of a computer (printed, seen, heard, watched). For example a screen, printer or headphones.
Algorithm - an algorithm is a step by step procedure to solve logical problems.
Binary Code – a number system in which there are only two possible states, off and on, symbolized by 0 and 1.



E-safety

Target Audience – the audience which a product is aimed at.
Age Restriction – an age limit in place to help protect users from seeing inappropriate content.
Online Reputation – the image of yourself which is created through the things you do online.
Privacy Settings – the settings which can be applied so that you choose who sees your content.
False accounts – social media accounts create to scam people.
Fake News – content which has been manipulated or incorrectly reported.
Photoshopping – editing images.

Settings icon



Need help? Search for:
Childline, internetmatters, ceop or thinkuknow for information and advice.

DANCE

Thriller!

Choreography

Relationships:

Canon: Starting a sequence one after the other.

Mirroring: Doing the same thing on the opposite side to a partner to create a mirror image

Space:

Direction: Where you face and travel towards

Levels: Distance from the ground: High, medium, low

Formations: The order and shape your group stands in the space.

Key Terms

Pirouette: an act of spinning on one foot, typically with the raised foot touching the knee of the supporting leg.

Projection: The energy the dancer uses to connect with and draw in the audience

Musicality: The ability to make the unique qualities of the accompaniment evident in the performance

Direct Correlation: movement closely matches the music's beat, rhythm and highlights

Technical, Expressive, Mental & Physical Skills

T- Accuracy of dynamic content

E- Facial expressions, Projection, Musicality

M- Planning of rehearsal

P- Extension, Isolation

Dynamic Descriptors

Rigid Stiff

Laboured Jerky

Heavy Lifeless

Helpful videos

Original Thriller Music video: https://www.youtube.com/watch?v=sOnqjkJTMaA

Example of adapted Thriller dance: https://www.youtube.com/watch?v=55h-

Performance Environment: Dance for Camera

Facial Expressions

Wide eyes, vacant expression, scowl, mouth hanging open, staring, scrunched up face

Physical Theatre

Key Vocabulary

Physical Theatre – theatre in which physical movement is important prominent.

Abstract – representing events, situations or feelings rather than acting them out in a realistic manner.

Naturalistic– a style of theatre that is true to life.

Proxemics – How close to or far away things and people are from each other on stage.

Devise – Creating an original performance from a stimulus

Rules of Lifting

1. Lift with your knees not with your back.
2. NOBODY lifts until EVERYONE is ready.
3. Always put people down feet first.
4. Listen to the person being lifted. If they want to come down, bring them down safely and immediately.
5. Counting. 1 prepare, 2 bend, 3 lift.

3 Stages of Devising

- Creation of Ideas
- Selection
- Refinement

Key Practitioner - Frantic Assembly

- Frantic Ignition 2017 Highlights https://www.youtube.com/watch?v=H_M7t-kdVLw
- Chair Duets: Othello Cast https://www.youtube.com/watch?v=nLrabSNRHhg
- Chair Duets: Frantic Ignition 2015 Company https://www.youtube.com/watch?v=Af7lbwW8cFY

DRAMA

DESIGN & TECHNOLOGY

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

What you will learn

- Workshop and tool safety
- How to measure and mark out materials
- How to cut wood and polymers
- How to assemble parts and join materials
- How to read and draw simple plans (Orthographic Drawing)
- How to draw three dimensional objects and add shade, colour and annotation. (Isometric Drawing)
- The design process and key designers.

Designer—Dieter Rams
Company—Braun

Designer—William Morris

Key Term	Meaning
Face Side – Face Edge	Markings to show which way round you
Steel Ruler	For measuring in millimetres (mm).
Try-square or Carpenters Square	For drawing 90 degree angles.
Waste Wood	The wood not needed (Marked with XXX's).
Scroll Saw	For cutting curves in thin plywood.
Pedestal Drill	For drilling holes.
Disc Sander	For sanding down to the line.
Tenon Saw	For cutting straight lines.
Bench Hook	Used to hold the wood on the bench.
G Clamp	Used to hold wood in place on the bench
Vice	Used to hold the bench hook and the wood

DESIGN & TECHNOLOGY

Year 7 Knowledge organizer

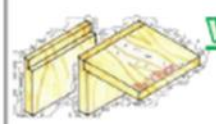
Design and Technology

'Out of the Box' Project

1: JOINING METHODS

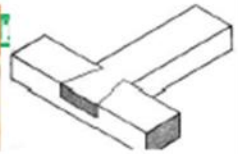
Permanent:	*Temporary*:
When we do not want to take the pieces apart again	When we will, or might need to take pieces apart again
Glues, welding, rivets	Screws, bolts, nails

Wood joints can be either permanent of temporary depending on the type and if glue is used.



Lap Joint

Mortise + Tenon Joint



Dovetail Joint

2. Scales of Production

One off: when you make a unique item

Batch: when you make a few/set amount

Mass: when you make thousands

Continuous: open ended production

3. Scales of Measurement:

- mm = millimetre
- cm = centimetre
- m = metre

1cm = 10mm
1m = 100cm or 1000mm

4.1 Woods:

Hardwoods:	*Softwoods*:
Beech Oak Ash	Scots Pine Cedar Spruce

4.2 Engineered Boards

Engineered boards are manmade materials usually made by mixing wood chips and glues to make wooden sheets.

Examples:
Medium Density Fibreboard (MDF)
Chipboard, Plywood and Hardboard

4.3 Plastics

Plastics are made of *polymers*, and are mostly refined from oil. There are 2 main categories:

Thermoplastics	*Thermosetting plastics*
Acrylic	*Urea Formaldehyde*
Polypropylene (PP)	*Melamine Formaldehyde*
High Impact Polystyrene (HIPS)	*Epoxy Resin*

4.4 Metals

Metals are hard and usually shiny, containing one or more elements dug and Refined from the ground

Ferrous metals are any metal that contains iron and will rust

Non-Ferrous metals do not contain iron and will not rust

Try square

Bench Hook

Vice

5: TOOLS

Pillar drill

Laser cutter

Chisel

Tenon Saw

6: SURFACE FINISHES

Finishing is usually one of the last stages of making a project. It will usually involve sanding and applying a surface coating to protect your material and make it look better.

Some examples:

Paint, Varnish, Oil, Wax, Polish & Dip Coating.
Electroplating = coating one metal with another.

Key Word Focus

CAD	Computer Aided Design
CAM	Computer Aided Manufacture
Materials	Pewter, Medium Density
Tolerance	Allowable amount of variation of a specific quantity
Alloy	A mix of 2 or more metals

You should be able to explain the meaning of each of these words by the end of this rotation.

OLIVER TWIST

Social and Historical Context

Queen Victoria ruled Great Britain and Ireland for more than 63 years. The period of her reign, from 1837 to 1901, became known as the Victorian Age. During the Victorian Age Britain became the largest empire that had ever existed.

When Victoria came to the throne, the majority of people lived in villages and worked on the land. By the end of her reign the population of Britain had more than doubled and most people lived in towns and worked in offices, shops, and factories.

In early Victorian Britain, many children did not go to school as children do today. School had not yet become compulsory. Girls tended not to go to school. If they were rich they might have been taught at home and richer boys were sent to boarding school. Children from poorer families often had to go to work in order to support their families.

During the years of Victoria's reign, attitudes towards children's education changed dramatically and by the later Victorian years both boys and girls, no matter what their background, were able to go to school.

Key themes and ideas: Poverty, Corruption, Religion, Relationships, Identity, Virtue, Criminality, Society, Alienation, Redemption, Social Injustice, Family, Kindness, Class, Inequality, Crime and Punishment, Childhood and Adulthood, Orphanage and Parentage, Fortune, Death, Evil

Settings	Challenging vocab
The Workhouse	Assiduously
Mr Sowerberry's undertakers	Voracious
City of London	Pauper
The Thames	Prophetic
Fagin's residence	Apprentice
Sike's residence	Virtuous
Mr Brownlow's house	Sullenness
Miss Maylie's house	Enshrouded
Village in the country	Expedient
Public houses	Malignity
Prison	
The Court	

Key techniques
Description
Exaggeration
Sense of humour
Irony
Bildungsroman
Metaphor
Satire

OLIVER TWIST

Oliver Twist	Nancy	Artful Dodger	Noah Claypole	Sikes	Fagin	Mr Brownlow
"Wrapped in the blanket which had hitherto formed his only covering he [Oliver] might have been the child of a nobleman or a beggar"	"This young lady, who was gaily, not to say gorgeously attire, in a red gown, green boots, and yellow curl-papers, to the other female"	"He wore a man's coat, which reached nearly to his heels. He had turned the cuffs back … as roistering and swaggering a young gentleman as ever stood four feet six"	"I'm Mr Noah Claypole and you're under me so don't you forget it"	"The man who growled out these words, was a stoutly-built fellow of about five-and thirty, in a black velveteen coat, very soiled drab breeches, lace-up half boots, and grey cotton stockings"	"A very old shrivelled Jew, whose villainous looking repulsive face was obscured by a quantity of matted red hair"	"Mr Brownlow's heart, being large enough for any six ordinary old gentleman of humane disposition"
"He was badged and ticketed … a parish child … the orphan of a workhouse"	"Oh my brother! My poor dear, sweet, innocent little brother!" exclaimed Nancy, bursting into tears … in an agony of distress"	"One of the queerest-looking boys that Oliver had ever seen"	" … performed some afflicting tears and sniffs'	" … a broad heavy countenance with a beard of three days' growth and two scowling eyes"	"I've –I've had my eye upon him, my dears, close-close. Once let him feel that he is one of us; once fill his mind with the idea that he has been a thief, and he's ours!"	"…drawing Oliver toward him and laying his hand upon his head"
"The boy was lying, fast asleep, on a rude bed upon the floor, so pale with anxiety, and sadness, and the closeness of his prison, that he looked like death"	"thieved for you when I was a child not half as old as [Oliver]. I have been in the same trade and in the same service, for twelve years since; don't you know it? Speak out! Don't you know	"All of the airs and manners of a man"	" … an imposing show of tears and terror"	"It was a ghastly figure to look upon. The murderer staggering backward to the wall … seized a heavy club and struck her down"	"With this boy, properly managed, my dears, I could do what I couldn't with twenty of them"	"Mr Brownlow took up the thread of the narrative"
" 'Oh! God forgive this wretched man!' cried the boy with a burst of tears"	"I am chained to my old life. I loathe and hate it now, but I cannot leave it"	"Snub-nosed, flat-browed, common-faced"	"He tried to murder me sir, and then he tried to murder Charlotte"	"Give me a rope or I shall do three more murders and kill myself"	"The condemned criminal was seated on his bed, rocking himself from side to side, with a countenance more like that of a snared beast than the face of a man"	"Mr Brownlow adopted Oliver as his son"

FOOD & NUTRITION

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

Recipes to learn:

- Fruit crumble
- Bread
- Bolognaise
- Omelette
- Cookies
- Rock cakes

Skills to learn

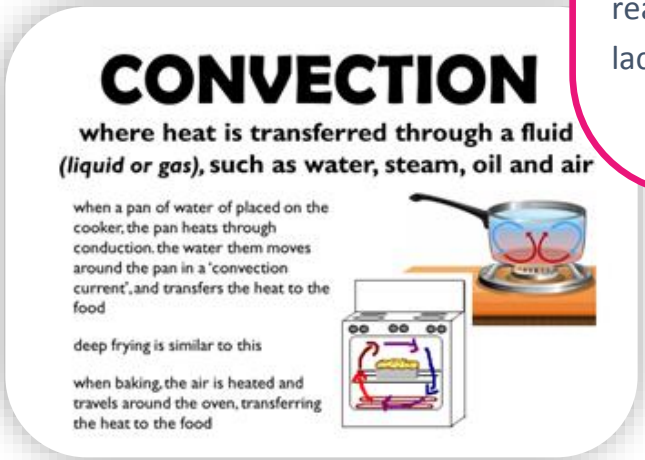
- Chopping safely using the **'bridge and claw'**
- How to 'rub in' butter and flour Kneading
- Mixing
- Whisking
- Frying

Other topics to learn:

Nutrition and healthy eating – which foods are part of a healthy diet and to know why.

Food miles – what are food miles, what is your carbon footprint and what can we do to reduce these.

Vegetarianism and special diets – what are the medical, environmental, ethical and religious reasons to reduce eating meat. What does lactose intolerant and coeliac mean?



Scientific processes to learn

- Respiration – yeast and bacteria break down sugars and carbohydrates
- Dextrinisation – starch turns brown in dry heat
- Denaturation – proteins change their structure when heated, whisked or mixed with acid
- Coagulation – proteins set when heated
- Aerating – adding air to a mixture to help it rise
- Caramelisation – sugar turns brown

GEOGRAPHY YEAR 7: WEATHER

Key term	Definition	Key term	Definition
Weather	The conditions of the atmosphere over a short period of time.	Climate	The average weather conditions over relatively long periods of time.
Isobars	Lines on weather map that connect areas of the same pressure. Can show areas of high or low pressure	Extreme weather	Weather events that do not occur normally. These are often violent and dangerous in their nature.
Biome Extreme weather?		Hurricane	A huge storm with a violent wind and often a storm surge which develops over water
Depression	An area of low pressure that brings very changeable weather, including rainfall	Distribution	How spread out something is.

Key idea 1: There are a range of different weather processes

Clouds

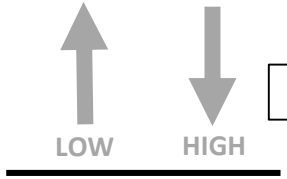
There are different types of cloud that form when air rises cools and condenses. They can tell us about what type of weather is on the way.

Types of Rain

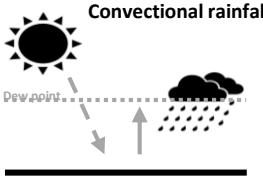
Clouds often lead to rain. There are 3 types of rain

High and Low Pressure

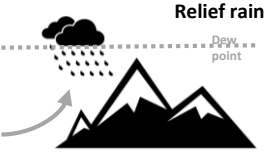
High and low pressure depends upon whether air is rising or falling. High and low pressure bring different types of weather.



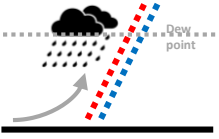
Convectional rainfall



Relief rainfall

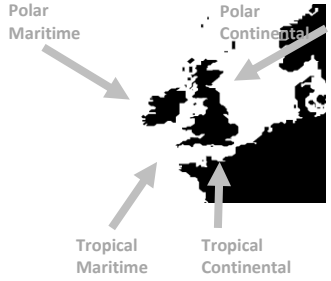


Frontal rainfall



Air Masses bring different types of weather depending on where they are coming from

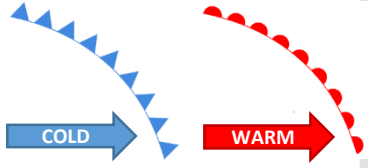
Maritime	Wet
Continental	Dry
Polar	Cold
Tropical	Warm



Weather Fronts and depressions

When two air masses meet, you get a weather front. Fronts are either hot or cold with a cold front in front of cold air and warm front in front of warm air.

Different weather fronts bring different weather. When weather fronts meet, they can cause turbulent weather, such as in a depression.



Key idea 2: Weather conditions can be measured and mapped

Weather, Apparatus and Measurements

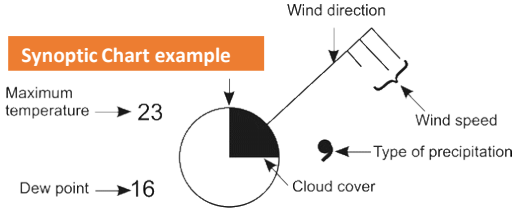
Temperature	Thermometer	Degrees Centigrade (°C)
Pressure	Barometer	Millibars (mb)
Wind Direction	Wind Vane	Compass directions
Wind Speed	Anemometer	Mph
Cloud Coverage	Human eye	Oktas
Precipitation	Rainfall Gauge	Millimetres (mm)

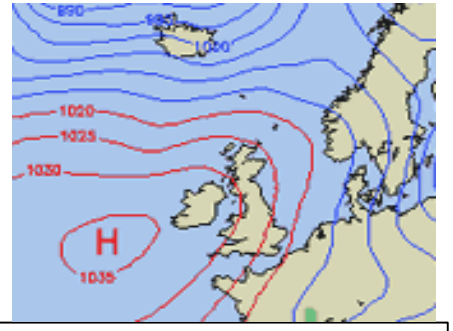
Displaying weather data

Meteorologists use synoptic weather symbols to map weather (see example below). They show a range of weather conditions.

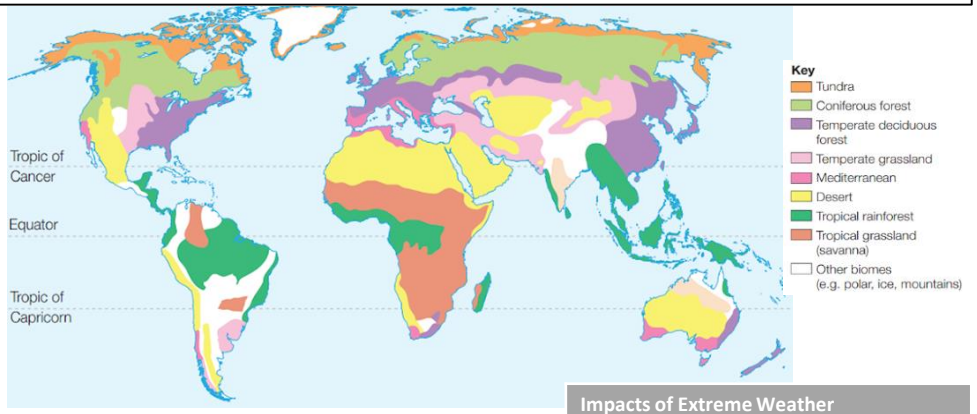
Isobars (see map) represent wind and pressure on a map. Closer the lines are, the higher the wind speed. The further apart they are, the calmer the winds are. Isobars over 1000mb are considered high pressure, and less than 1000mb are low pressure.

Synoptic Chart example





Key idea 3: Global climates and extreme weather events happen around the world



Extreme Weather

Extreme weather refers to events that are unseasonal and can cause potential damage to people and property. Events include heatwaves, hurricanes, tornadoes, drought and floods.

Extreme weather varies in distribution
For example Hurricanes are found in the tropics
Hurricanes occur over warm oceans (>27°C), where there is low wind angles and low latitudes. Many occur on the south-eastern coast of the USA.

Impacts of Extreme Weather

Impacts are dependant on a number of things, such as the place it hits, the size of the event, duration of the event

Primary impacts:
Death, destruction of property, disruption to transport

Secondary impacts:
Business closures, food shortages, job loss, pressure on hospitals

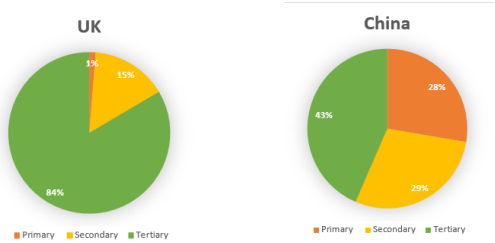
Year 7 Geography: Globalisation

Key term	Definition
Economy	The state of a country in terms of its supply of money and the jobs people do
Primary work	Jobs that involve collecting raw materials (e.g. farming or mining)
Secondary work	Jobs that involve the processing of raw materials, or manufacturing (e.g. carpentry)
Tertiary work	Jobs that provide a service (e.g. teachers, police)
Quaternary work	Jobs in the 'knowledge economy' that involve research and the development of new ideas (e.g. research into cancer drugs)
Employment structure	The percentage of people in a country who work in each type of job
HIC	High income country
LIC	Low income country
Globalisation	The process of the world becoming more connected
Trade	An exchange between two parties (could be of money or goods and be between people, companies or countries)
Culture	The traditions and ways of living that people follow

Key idea 1: The economies of countries vary

Economic variation

HIC economies and LIC economies vary in terms of:
- Total income
- Average income
- How much they are growing
- The types of jobs that people do in each country



Employment

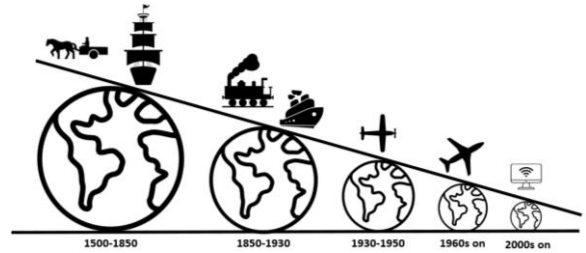
Jobs can be divided into different categories (see keywords). The employment structure of a country will tell you a lot about the economy of that country as it shows what types of job the majority of people are doing, as the examples show.

Key idea 2: Globalisation makes the world more connected

Globalisation

Globalisation has a range of different aspects that make people around the world more connected.

1. Money and goods
2. Information and communication
3. People and culture
4. Transport



A shrinking world?

Improvements to transport throughout history have repeatedly reduced the times that it has taken to travel and communicate between different locations.

Key idea 3: Globalisation can have a range of different impacts

Positive impacts	Negative impacts
Brings in wealth	LICs are exploited
Highlights global issues	Local companies go out of business
Promotes diversity, tolerance and understanding	Homogenisation of culture – everywhere becomes the same
Allows for sharing of knowledge	Local traditions eroded

Impacts of different groups of people

Because globalisation has both positive and negative impacts, it means that some people are going to benefit more than others, depending on where they live and what sorts of jobs they do. The people mentioned below will all be affected in different ways.

Kenyan tour guide	Peruvian cotton farmer	Chinese factory owner	British cancer researcher

Medieval Life – background

- The king was supposed to run the country, make laws, call taxes and defend people from foreign invaders
- Lords and earls and barons would own land and look after it for the king – if the king wanted to fight wars, they were supposed to send knights to the king to help him defend the country
- Most medieval people were peasants:

⇒ Villeins – owned by the lord

⇒ Freemen – worked for the lord (but not owned)

- Each section of the country would be split into 'manors' (an area of land run by a lord). The lord would live in the biggest house in the town or village, and rent lots of land out to peasants. The lord would also have knights, who would go and fight for the king if he went to war.
- The worst disease of the medieval period was the plague, also known as the Black Death. It wiped out half of the population in 3 years. People at the time didn't know what had caused it – they thought God might have send plague as a punishment, or that they could get it by making eye-contact with people who already had the plague.

Catholic beliefs

- Churches should be decorated with gold, paintings, & ornaments
- Priests should wear expensive robes.
- The Bible should be in Latin.
- The Church is led by the Pope.
- You can get into heaven by doing 'good works'

King John

Key dates

- 1199: John became King of England
- 1208: Pope Innocent III placed England under interdict
- 1214: John started another war against the French and raised taxes
- 1215: John was forced to sign Magna Carta

Key events

- Throughout the medieval period, kings of England had many difficulties keeping control of the various parts, people, and positions within the country and its government
- One of these kings was John, who was king in 1199-1216
- John was a very unpopular king, particularly amongst the barons (who he constantly fell out with over how much power he thought they should have)
- In 1206, John argued with Pope Innocent III, the Head of the Church, over who should be the next Archbishop of Canterbury. This resulted in England being placed under interdict in 1208. This meant all churches were locked and no one could go to services, no one could get married and no one could be buried in church ground. People were terrified that this would mean they were going to hell.
- John fought many unsuccessful wars against King Philip of France over French land. This was expensive and meant that John had to keep raising taxes. The barons worried that John was ruining the country
- John was forced to sign Magna Carta in 1215, a set of rules that reduced his power and gave the barons more control. This document is seen as significant as it starts the idea that everyone has to follow the law, even the king.
- However, he did not follow it for long, and was fighting his barons when he died in 1216

HISTORY

Key people

King Henry II: King of England (1154-1189) who badly argued with Thomas Beckett in 1170.

Thomas Beckett: Archbishop of Canterbury, originally one of King Henry II's friends but became an enemy after becoming religious.

King John: King of England (1199-1216), very unpopular, forced to sign *Magna Carta* in 1216.

Edward III: King of England 1337-1377 and was King during the Black Death

Richard II: King of England 1377-1399 and was King during the Peasants' Revolt

The First Crusade

Key dates:

- 1096-1099: First Crusade aims to recapture Jerusalem

Key events

- Pope Urban II called upon European Christians to recapture the city of Jerusalem from the Seljuq Turks, a Muslim empire
- Many people agreed to go on the crusade as they believed it would win them favour with God and help them to get to heaven
- The journey to Jerusalem was a difficult one and there were a number of battles along the way
- The crusaders were eventually victorious and captured the city of Jerusalem in 1099. Many of the crusaders were then guilty of killing Muslims and Jews in the city, as well as stealing any valuables they could find

Key topic terms

- **Baron**: a person who helps the king to run the country
- **Pilgrimage:** a journey made to a place of religious significance
- **Parliament:** a group of nobles who give the king permission to raise taxes
- **Peasants:** freemen or villeins, poorer people in medieval society
- **Magna Carta:** an agreement signed by King John which gave the barons some power
- **Taxes:** amounts of money paid by people to the king e.g. for war

Key history terms

Source: Information from the time period being studied e.g. a painting of Tyler

Cause: A reason why an historical event happened

Interpretation: A representation of the past, made after the time e.g., a historian's book

MATHS

Fractions of amounts

$\frac{3}{5}$ of 120 is the same as $\frac{3}{5}$ x 120

Division by bus stop method

$$\begin{array}{r} 045 \\ 8\overline{)\,3\,{}^{3}6\,{}^{4}0} \end{array}$$

Grid Method

23 x 45

x	20	3
40	800	120
5	100	15

800 + 120 + 100 + 15 = 1035

Arithmetic with Fractions

a) $\frac{1}{3}+\frac{1}{3}=\frac{2}{3}$ b) $\frac{3}{5}-\frac{1}{5}=\frac{2}{5}$ c) $\frac{1}{2}+\frac{1}{3}=\frac{5}{6}$ d) $\frac{1}{2}-\frac{1}{3}=\frac{1}{6}$

e) $\frac{2}{3}x\frac{3}{5}=\frac{6}{15}$ e) $\frac{1}{3}\div 2=\frac{1}{3}\text{ x }\frac{1}{2}=\frac{1}{6}$ f) $3\div\frac{2}{5}=\frac{3}{1}\text{ x }\frac{5}{2}=\frac{15}{2}$

Place Value

M	HTh	TTh	Th	H	T	O	t	h	th
1,000,00	100,00	10,00	1,00	100	10	1	0.1	0.0	0.00
							$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Negative Numbers

3 + -5 = 3 – 5

-3 + -5 = -3 – 5

3 - -5 = 3 + 5

-3 - -5 = -3 + 5

3 x 5 = 15

3 x -5 = -15

-3 x 5 = -15

-3 x -5 = 15

15 ÷ 3 = 5

-15 ÷ 3 = -5

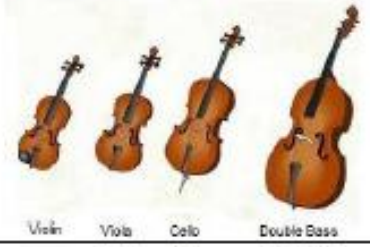
15 ÷ -3 = -5

MUSIC

Year 7 Music—Instruments of the Orchestra

A: String Section/Family

Made from wood and have strings. They are usually played with a BOW (ARCO) – not the Harp (shown right) but can also be PLUCKED (PIZZICATO). The smaller the instrument, the HIGHER PITCHED it is. The bigger the instrument, the LOWER PITCHED it is. However, the Harp has many more strings so can play both high- and low-pitched notes.



B: Woodwind Section/Family

A selection of instruments divided into two subsections: FLUTES (create a sound by air passing over a small hole and include the Flute and Piccolo) and REEDS (use a piece of bamboo reed to create a vibration). The Saxophone (shown above right) is not traditionally used in an orchestra. However, some modern composers have included it.

C:Brass Section/Family

There are more brass instruments used in brass bands, but the orchestra normally has four. They are made of metal and the sound is made by blowing into the mouthpiece by buzzing the lips in a similar way to blowing a raspberry! The bigger the instrument, the lower the pitch. The smaller the instrument, the higher the pitch – the Trumpet is the highest.

D: Percussion Section/Family

Includes a vast range of instruments which produce sound when hit, struck, scraped or shaken. These fall into two subsections: TUNED PERCUSSION (able to play different pitches) and UNTUNED PERCUSSION (e.g. drums)

TUNED PERCUSION

UNTUNED PERCUSION

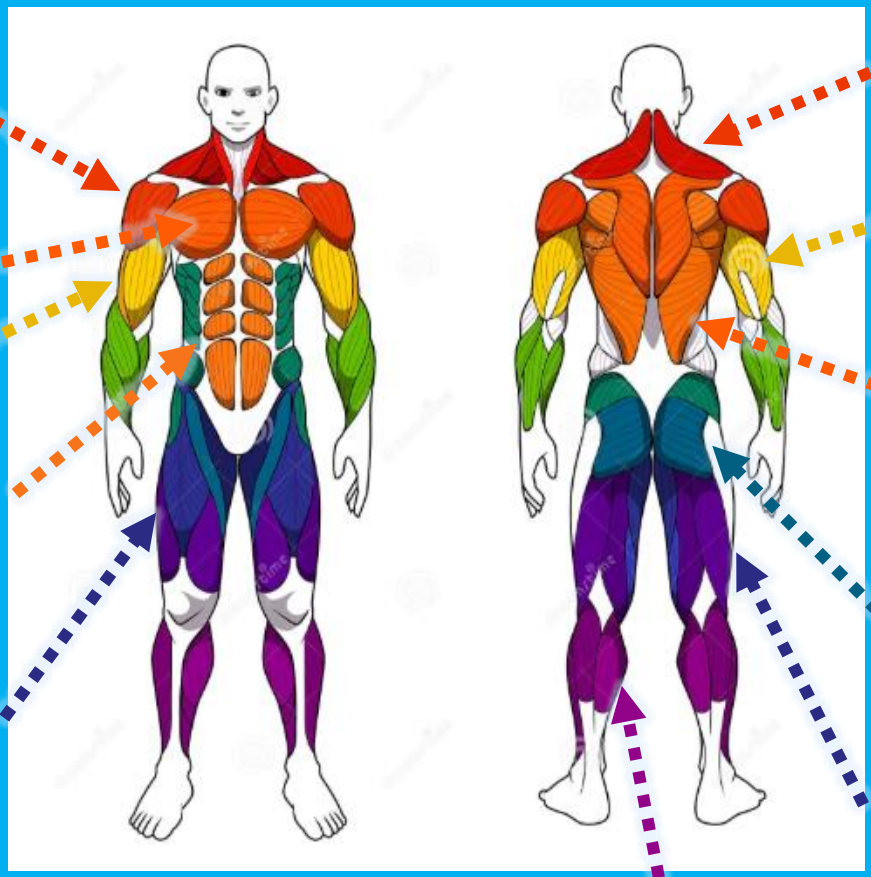
E: Key Words

1. ORCHESTRA – A large ENSEMBLE (group) of musicians divided into four SECTIONS or FAMILIES of musical instruments – STRINGS, WOODWIND, BRASS and PERCUSSION - led by a CONDUCTOR.
2. ENSEMBLE – A group of musicians.
3. CONDUCTOR – Stands at the front of the orchestra and directs it. They will indicate the main beats in the music using a BATON (a "stick" that they hold and beat time with). All musicians look at the conductor whist playing as they are ultimately in control of the whole piece.
4. PITCH - The highness or lowness of a sound or musical note.
5. SONORITY (also called TIMBRE) – Describes the unique sound or tone quality of different instruments and the way we can identify orchestral instruments as being distinct from each other – "each instruments' own unique sound". Sonority can be described by many different words including – velvety, screechy, throaty, rattling, mellow, chirpy, brassy, sharp, heavy, buzzing, crisp, metallic, wooden etc.

F: Map/Plan of the Orchestra

PE

There are 11 main Muscle groups



Deltoids

Pectorals

Biceps

Abdominals

Quadriceps

Trapezius

Triceps

Latissimus Dorsi

Gluteals

Hamstrings

Gastrocnemius

Action: The movement the muscle produces

Origin: Where muscle starts

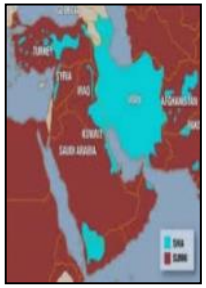
Insertion: Where the muscle attaches

Challenge

Can you think of an exercise that strengthens each muscle?

ISLAM KNOWLEDGE ORGANISER

REP

Answers to Important Questions and Key Vocabulary		
Where do Muslims worship God?	 	-Muslims pray in a building called a mosque. -The word for mosque in Arabic is 'masjid.' Most masjids have at least one dome, and many also have one or two towers. -Muslims take off their shoes before entering the mosque to pray. This is a sign of respect. -On Fridays at noon, the most important religious service of the week is held in the mosques.
What is the Qur'an?		The Qur'an is the holy book of Islam. Muslims believe that the Qur'an contains the holy words of God, which teaches them the right path. Other important books in Islam are the Sunnah (about Mohammad's life) and the Hadith (the words of Mohammad).
Where do most Muslims live in the world?		-There are about 50 countries around the world in which Islam is the largest religion. -The Arab world (the Middle East and Northern Africa) accounts for about 20% of all Muslims. -There are also millions of Muslims from Indonesia, Pakistan, Bangladesh and India. -China, Iran and Turkey also have many Muslims. -After Christianity, Islam is the 2nd largest religion in most European countries.
How many different types of Muslims are there?		-There are two main types of Muslims – Sunni Muslims and Shia Muslims. Although all Muslims follow the Qur'an and the five pillars of Islam, they also have some differences. Sunni Muslims believe that leadership of the community (and the 'caliph' – leader) should be elected from the community. Shia believe that leadership should stay within the prophet's family, or be chosen by Allah.

ISLAM KNOWLEDGE ORGANISER

REP

Muslim Beliefs

Laws and Customs

-There are many laws and customs outlined in the Qur'an, that Muslims should follow.

-They must dress modestly, e.g. many Muslims wear long clothes that cover their bodies, and women wear a hijab which covers parts of their hair/face. Food must be halal, meaning animals must be killed in a certain way. .

Ramadan

-Ramadan is the ninth month of the Islamic calendar. It is a month in which Muslims worldwide take part in fasting.

-For the whole of the month, Muslims do not eat during daylight hours. Instead, they devote themselves to prayer and to Allah

The Five Pillars of Islam

-The Five Pillars of Islam are the behaviours and beliefs by which Muslims must live their lives. They were founded in the hadith of Gabriel.

1.Shahadah: the declaration of faith: 'There is no God but Allah, and Mohammad is his messenger.' 2. Salah: the five daily prayers. 3. Zakah: Giving money to help the poor. 4. Sawm: Committing to fasting during the month of Ramadan. 5. Hajj: A religious pilgrimage to Mecca that Muslims should undertake at least once in their lives.

Muhammad

- Muslims believe that God sent his final message to Earth through Muhammad, 1400 years ago. He is considered so holy that Muslims say 'peace be upon him' whenever they say or write his name.

-When he was around 40 years old, Muhammad is believed to have been approached in a cave by the angel Gabriel, who sent 'revelations' from Allah. He continued to receive these messages, and to teach them to others.

-The messages that Muhammad received were later collected and made into the Qu'ran. Muslims believe that they should follow the example set by Muhammad throughout their own lives.

Islam Timeline

Beginning of time: Allah creates the world and everything in it.	Around 570CE: Muhammad is born in Mecca.	c.610CE: Muhammad receives the first revelation from Gabriel.	c.622CE: Muhammad reaches Medina. Beginning of Islamic calendar.	c.630CE: Muhammad returns to Mecca. People accept Islam.	c.633CE: Muhammad dies. Abu-Bakr made caliph	c.655CE: Islam spreads from the Middle East through North Africa.	c.1120CE: Islam spreads to South-East Asia.	c.1979CE: Iranian Revolution forms state of Iran – first attempt at an Islamic state.

ISLAM KNOWLEDGE ORGANISER

REP

Overview

Islam is one of the world's major religions. It is the **world's 2nd largest religion**, with about 1.8 billion followers.

Muslims are the people who follow Islam. They believe in one **God** who created everything – he is called **Allah** (the Arabic name for 'God').

Muslims believe in a messenger of Allah, named **Muhammad.** They view him as the final **prophet,** following Adam, Abraham, Moses, Jesus and others.

Muhammad is believed to be the person who **founded** the faith of Islam, about 1,400 years ago.

The holy book in Islam is called **the Qur'an**. **A mosque** is a building designed for Muslim worship.

Around 2.5 million Muslims each year take part in the annual 'hajj' pilgrimage to Mecca.

Top 10 Facts!

1. Friday is the Muslim holy day. People go to the Mosque and pray.
2. Islam is the fastest-growing religion in the world.
3. Muhammad was born in Mecca – which is now in Saudi Arabia. It is considered a holy place.
4. The very first mosque was in the courtyard of the home of the prophet Muhammad.
5. The Ka'ba is an ancient shrine in Mecca that Muslims believe is the holiest place on earth.
6. Muslims believe that Allah told Muhammad exactly what to write in the Qur'an.
7. The Qur'an has a total of 144 chapters. Many Muslims try to memorise the entire Qur'an!
8. Muslims are called to prayer by a muezzin, a man who sings through a loudspeaker.
9. About 23% of the global population are Muslim.
10. The 'Islamic World' refers to the Middle East, North Africa, and parts of South East Asia.

Bottisham Village College

KNOWLEDGE ORGANISER

YEAR 7 SCIENCE TERM 2

- ELECTRICITY & MAGNETISM
- FORCES
- ORGANISATION
- PROPERTIES OF MATTER

Electricity and Magnetism Year 7

A. Keywords.

Cell	A chemical store of energy, which provides the push that moves charges around a circuit.
Battery	Two or more electrical cells joined together.
Switch	Can be opened or closed to turn a circuit on or off.
Magnetic field	The area around a magnet where another magnetic object will feel a force.
Circuit	Components connected together using wires.
Complete circuit	All wires and components connected, with no gaps. Electricity will only flow through a complete circuit.
Ammeter	A component placed in a circuit to measure the current
Poles	The ends of a magnet. Every magnet has a north pole and a south pole.
Rate	A measure of how frequently something occurs. If something has a high rate, then it happens more often each second. E.g. a higher current means more charges flowing past a point every second.

B. Working scientifically

We could use the circuit in **section D** to investigate how changing the number of bulbs in a circuit affects the current, by adding more bulbs and measuring the current on the **ammeters**. The **SI unit** for current is the **Ampere** or **Amps (A)**

Making Predictions

Before we carry out experiments, we make predictions of what we expect to happen. We can make two kinds of prediction:

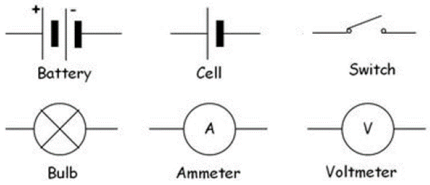
Qualitative—just using words to explain what we think will happen

Quantitative—using numbers to predict what data we will get (i.e. the values of current that we will get).

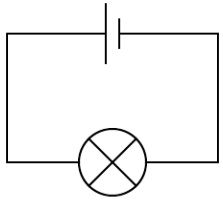
When we make a prediction we should **always** use our scientific knowledge to explain **why** we are predicting a certain outcome.

C. Circuits

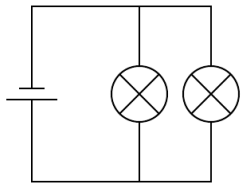
Circuit symbols are used to represent components (the parts of the circuit). To draw a circuit, we connect the symbols with lines to represent the wires.



Series circuits
All components connected in one continuous loop.



Parallel circuits
Components connected across more than one loop.

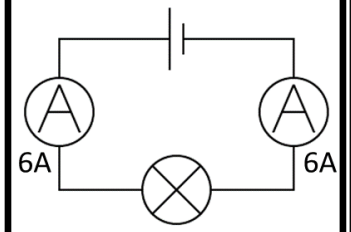


D. Current in series

Current is a measure of the rate of flow of **negative charges** around a circuit. These charges are called **electrons.**

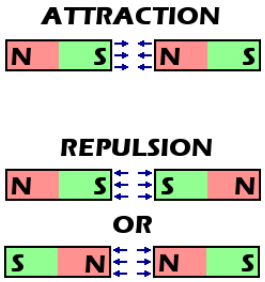
Current is measured using an **ammeter.** The unit is **Amps (A).** Ammeters are always connected in series to the component being measured (like in the diagram).

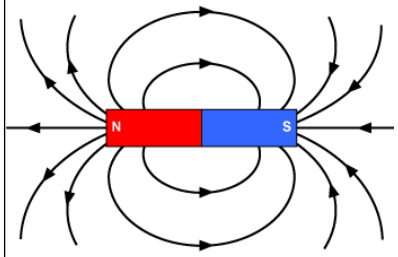
Series circuits
Current is the same everywhere in a series circuit.



E. Magnets

All magnets have a north and a south pole, one at either end. If you bring two magnets near each other, the **opposite** poles will **attract**, but same poles will **repel.**



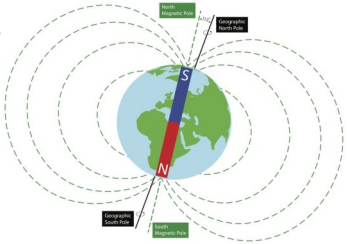


A simple, rectangular magnet is called a bar magnet. The magnetic field around them can be observed by surrounding them with iron filings. The field lines always point from **north** to **south**.

The Earth also has a magnetic field. What we call the North pole is actually the south pole of a giant magnet!!!

It is because of this magnetic field that we can use smaller magnets to make compasses for navigation.

The Earth's Magnetic Field

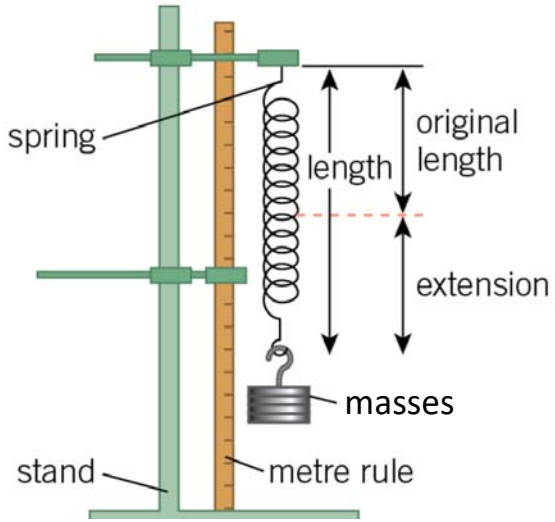


Forces Year 7

A. Key words.

Contact Force	A force acting between/on objects that are touching
Non-Contact Force	A force that can act between objects that are not touching
Weight	The force acting on an object due to gravity
Resultant Force	A single force that can replace all forces acting on an object to give the same effect as the original
Gravitational force	A non-contact force that acts between two masses
Mass	The amount of stuff in an object.
Gravitational field strength	The force from gravity on 1 Kg
Friction	Contact force that opposes motion.
Drag	The frictional force caused by any fluid (a liquid or gas) on a moving
Force	A push or pull that can change the shape or direction an object is
Reaction Force	A support force provided by a solid
Deformation	When a force changes the shape of an object

B. Working Scientifically -Hooke's Law



Change the force by adding a different amount of mass to the spring. Predict what you think will happen as you add more masses. Each time, measure the new length of spring. The extension is the new length minus the original length.

$$F = k \times e$$

F - Force (N) k - Spring constant (N/m) e - Extension (m)

The greater the spring constant (k), the greater the force needed to extend the material a given length. A high value of k means the material is stiff.

C. Weight Equation

$$W = m \times g$$

W - Weight (N) m - Mass (Kg)

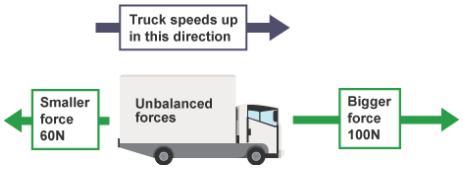
g - Gravitational field strength (N/Kg)

Mass is a measure of how much stuff there is measured using a balance. Weight is a force measured using a Newton meter. Weight is different on different planets.

Gravitational field strength depends on the mass of the object and how far away the object is

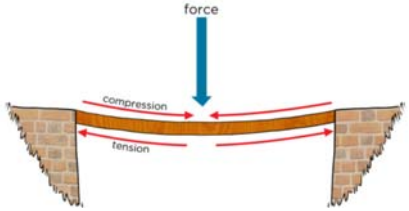
D. Resultant Force

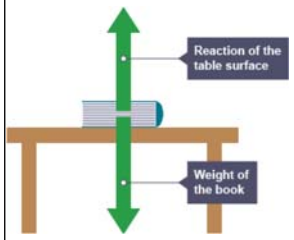
When forces on an object are not balanced the overall force acting on an object is the resultant force. This causes an object to move/ change speed or direction, in the direction of the resultant force.



E. Stretching and Squashing

Forces deform objects. If the object is stretched, it is called **tension.** If it is squashed, it is called **compression.**





Squashing: When you stand on the floor, you don't sink into it. This is because of the **reaction force**. The bonds between the particles in the floor are compressed slightly and they push back and support you.

Stretching: Springs and other objects stretch when you exert a force. If you stretch a spring too much, it will not go back to it's original shape. This is called it's elastic limit

F. Contact and Non-contact forces

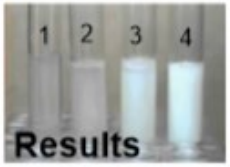
Contact Forces	Non-Contact Forces
Friction	Gravitational force
Air resistance	Magnetic force
Normal contact force	Electrostatic force
Tension	

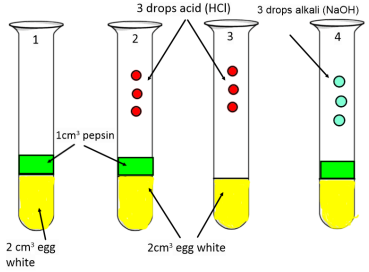
Organisation Year 7

A. Keywords.

Nutrient	Nutrients are compounds in food that are essential to life and health.
Joules (J)/ Kilojoules (kJ)	There are 1000 Joules in 1 Kilojoule. It is a measure of the chemical energy in food. (Replaces calories and kilocalories)
Deficiency Disease	A disease caused by the lack of a nutrient in our diet, usually a lack of a vitamin or mineral.
Salivary gland	A small organ under the tongue that makes a digestive enzyme called amylase.
Amylase	A digestive enzyme that breaks down starch into sugar.
Digestion	The process that breaks down large food molecules into smaller molecules that can be absorbed into the blood stream.
Absorption	Small , soluble nutrients are taken in / soaked up into the blood stream. The correct term to use is absorbed.
Villi (villus)	Tiny finger like structures that line the small intestine. Their function is to absorb small, soluble nutrients into the blood stream.
Enzyme	Special chemicals that speed up digestion inside our bodies. They are called biological catalysts.
Protease (pepsin)	A digestive enzyme that breaks down proteins into smaller, soluble molecules.
Stomach	An organ made of muscle that produces acid and an enzyme (pepsin) to digest the protein in our food.
Pancreas	An organ that produces 3 different enzymes to digest proteins, fats and carbohydrates.
Liver	Produces bile which is stored in the gall bladder.

B. Working Scientifically.





In which conditions does the enzyme pepsin work best?

Independent variable—change the conditions (acid / alkali)

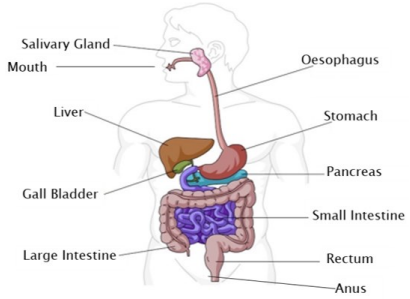
Dependent variable—collect result data on how long it takes the protein to be digested (white to colourless)

Control variables—keep the volume of egg white and the temperature the same in every tube, to make it a fair comparison.

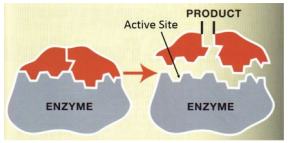
Biological Control Tube - tube 4 is a control or comparison tube set up to show that it is the enzyme pepsin, and not the acid , that digests the egg white protein. Boiling enzymes **denatures** them.

Results— Digestion of protein is best in tube 2. Tube 2 cleared the fastest. Pepsin works best in acidic conditions like the stomach.

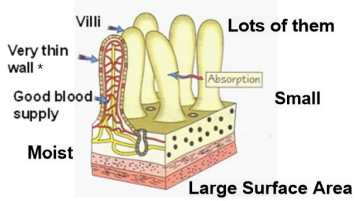
C Digestion, Enzymes and Absorption



Enzymes have an active site (the lock). If a food molecule (the key) is the right shape it will fit perfectly inside the active site and can be broken down e.g. starch to glucose

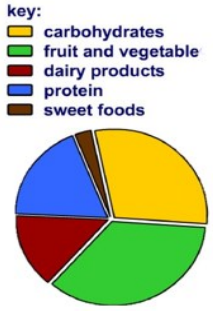


Digestion takes place in the mouth, stomach and small intestine. Absorption happens in the small intestine across the villi into the blood.



* only one cell thick

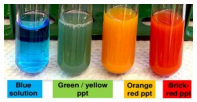
D. A Balanced Diet



Organisms need nutrients to stay alive. A healthy human diet involves seven different kinds of nutrients as in the table below:

Nutrient	Use in the body
Carbohydrate	To provide energy
Protein	For growth and repair
Lipids (fats and oils)	To provide energy. Also to store energy in the body and insulate it against the cold.
Minerals	Needed in small amounts to maintain health
Vitamins	Needed in small amounts to maintain health
Dietary fibre	To provide roughage to help to keep the food moving through the gut
Water	Needed for cells and body fluids

E. Food Testing



Benedict's Solution Test for Sugar

(needs to be heated above 70°C) **Blue** to **Green** to **Orange** to **Brick Red**, with increasing amounts of **sugar**

Biuret Test For Protein

Add two chemicals 1) Copper Sulphate 2) Sodium Hydroxide. The colour will change from **blue** to **purple**.

Iodine Solution Test for Starch

Add iodine solution. The colour will change from **brown** to **blue black** if starch is present.

Grease Test for Fats. Rub a sample on filter paper. A translucent stain (a greasy mark) appears if fat is present.

F. The impact of drugs on human health

A drug is a substance that changes the way the body or mind works.

Nicotine

A drug which stimulates the brain

Causes increase in blood pressure and heart rate adding wear and tear to heart. Causes addiction and craving

Alcohol

A drug that blocks signals between brain cells

Affects decision making, increases blood pressure and heart rate. Causes long term liver damage.

Properties of Matter
Year 7

A. Key words.

Particle	A very tiny object, such as an atom or molecule that materials are made from.
Boiling	The change of state from liquid to gas that occurs when bubbles of the substance in its gas state form throughout the liquid.
Diffusion	Spreading out of particles from a high concentration to a low concentration
Solvent	A substance that dissolves another substance.
Solute	The substance being dissolved
Solution	A mixture of a solute dissolved in a solvent.
Mixture	Two or more substances together that are not chemically bonded to each other.
Distillation	Technique used to obtain a solvent from a solution
Filtration	Technique used to obtain insoluble solids from a liquid/ solution
Chromatography	Technique used to separate liquids from each other

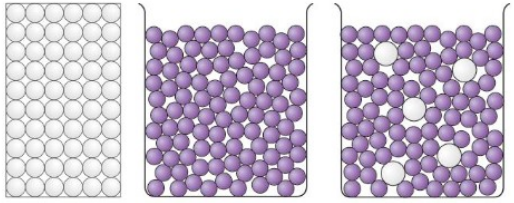
E. Properties of Materials

Hard - difficult to scratch / **Soft** - easy to scratch
Tough - difficult to break / **Brittle** - easy to break
Rigid - difficult to bend / **Flexible** - easy to bend

Malleable - can be shaped.

B. Solubility

When sugar dissolves, water particles surround each sugar particle. The sugar particles can mix with the liquid. They are arranged randomly and can move around.

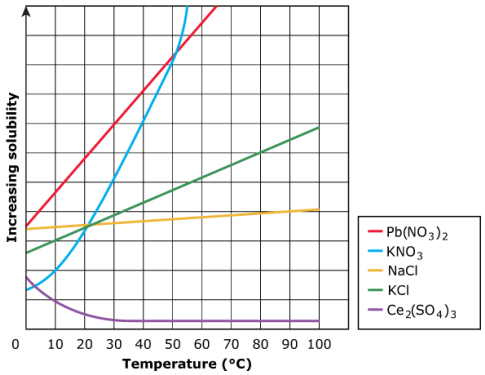


▲ Particles in solid sugar. ▲ Particles in liquid water. ▲ Particles in sugar solution.

C. Working Scientifically

When a solvent is heated it can dissolve more solute in it than when it is cold.

This is because the solvent particles have more kinetic energy which means the solvent particles can separate the solute particles more easily.



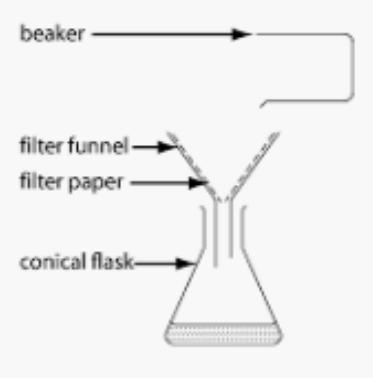
D. Separation techniques

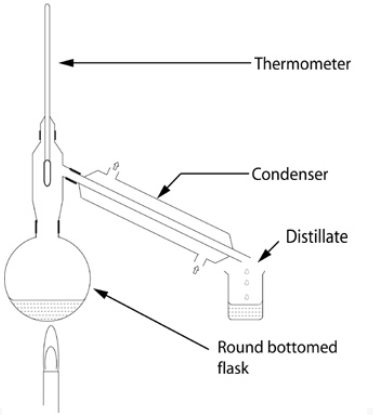
Used to separate mixtures. Ones you need to know:

Filtration - get an insoluble solid from a liquid

Distillation - get a pure liquid from a mixture of liquids

Chromatography - separate mixtures of coloured compounds





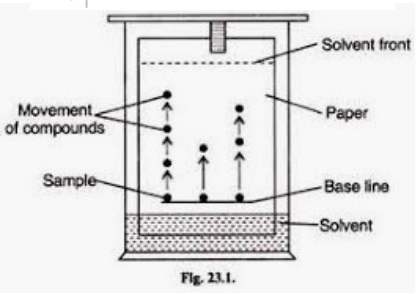


Fig. 23.1.